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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,840	10/23/2003	Hitomi Ushitani	0756-7213	5406
31780	7590	08/18/2005	EXAMINER	
ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165			LEE, GRANVILL D	
			ART UNIT	PAPER NUMBER
			2891	

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/690,840

Applicant(s)

USHITANI ET AL.

Examiner

Granvill D. Lee Jr

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 12-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 4-8, 13, 15-19, 21 and 23-27 is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☒ Claim(s) 12, 14, 20 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/28/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Applicant's Argument

After review of applicant's amendments and comments, the examiner finds such arguments unpersuasive. Applicant's comments as to Nakamura et al. are well taken, however in further review of the prior art, the examiner has found that Taft et al. read upon applicant's claimed invention. As these are a new grounds for rejection necessitated by applicant's amended claimed invention, and they are not to be considered a final rejections of the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taft et al. (US Pat. 5,300,454).

In regard to these claims, Taft et al. teaches a method for manufacturing a semiconductor apparatus comprising the steps of:

forming a semiconductor over a substrate (Fig. 17 #12),

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forming a mask (#14) comprising a resist (Col. 2 lines 50-55) over the semiconductor to overlap with a portion of the semiconductor (Fig. 17), and adding an impurity element to the semiconductor in accordance with the mask by a doping method (Abstr.). However, Taft et al. fails to consider an area of the mask is at most 15% (or 35% in re clm. 3) of the area of the substrate.

Yet, Taft et al. teaches that for a high or low masking percentage (or ratio of mask to wafer area) deeper or shallow implants can be formed, respectively (Col. 4 lines 1-15).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Taft et al. to include the idea of optimizing high or low masking percentages versus depth, in order to teach the specific percentage needed for a particular desired implant depth. In this way any shallow junctions or deep implants could be made more reliably, based on mask area (Col. 4 lines 1-25).

Allowable Subject Matter

Claims 12, 14, 20 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2, 4-8, 13, 15-19, 21 and 23-27 are allowable.

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Reasons for allowance are based on the fact that the prior art fails to teach an implantation method doping a substrate with an acceleration voltage, in an area of the mask is a predetermined percentage of the area of the substrate.

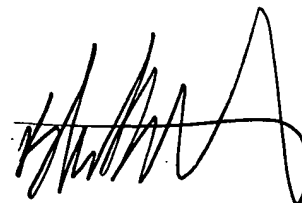
Contact Information

Any inquiry concerning this communication or earlier communications for the examiner should be directed to Granvill Lee whose telephone number is (571) 272-1897. The examiner can be normally reached on Monday thru Friday from 6:00 am to 2:30 pm.

If attempts to reach the examiner by telephone are not successful, the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for this group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner
Granvill Lee
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**B. WILLIAM BAUMEISTER
SUPERVISORY PATENT EXAMINER**